

Archived Information

Objective 4.4: Our information technology investments are sound and used to improve impact and efficiency.

National Need

National Concerns. The Department is committed to fulfilling the Information Technology Management Reform Act of 1996 (also known as the Clinger-Cohen Act). The Clinger-Cohen Act requires the Department to significantly improve the acquisition and management of information technology in order to advance mission performance and service delivery. Furthermore, the Department is committed to improving its information technology (IT) infrastructure, IT asset management, and information management (IM) policies. This is in accordance with Department priorities; Presidential Direction for IT security; continuity of operations; the Paperwork Reduction and the Paperwork Elimination Act; and December 1999 Presidential Executive Directives, such as Federal electronic government, electronic commerce, electronic working group, and electronic grants.

Our Role. The Chief Information Officer (CIO) leads the Department's implementation of the Clinger-Cohen Act, the Paperwork Reduction Act (PRA), the Paperwork Elimination Act, Presidential Executive Directives such as Federal electronic government, electronic commerce, and electronic-working group, among others. The Office of the Chief Information Officer (OCIO) serves as the Department's technical enabler to improve practices in the design, modernization, use, sharing, and performance of agency information resources, including those opportunities to apply information technology to multidisciplinary solutions. The CIO also serves on the Federal CIO Council, the principal interagency forum that leads and directs the strategic management of Federal IT resources and that serves as the focal point for coordination challenges that cross agency boundaries.

Our Performance

How We Measure. The following measures represent Department performance for this objective. Our goal is to institute a balanced scorecard for measuring customer satisfaction and sound business management in a manner that will incorporate subordinate process measures.

Indicator 4.4.a. IT investment assessments indicate that major information systems are mission-driven, cost-effective, consistent with our information technology architecture, and supported by performance-based management systems.

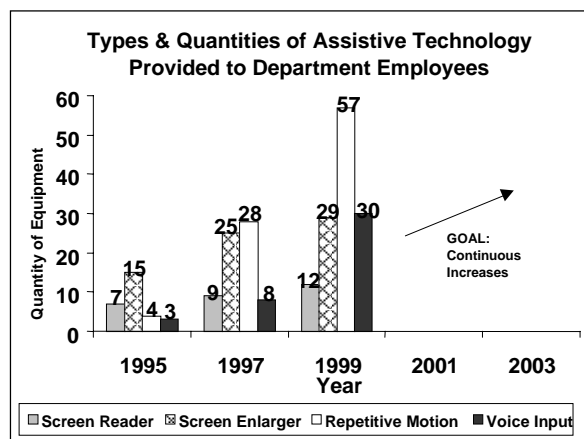
Assessment of Progress. To use this indicator, a baseline of cost, schedule, and performance goals for each major IT project will be created. The Department will measure actual project results against each project's estimates to calculate variances of cost, schedule, and performance. The Department's goal is that 80 percent of all major IT projects will be within a 10 percent variance of their cost, schedule, and performance goals by FY 2002. By tracking these variances to determine project progress for all of our major IT projects and considering the project data available at the time the Department made funding decisions, the Department can assess the investment management process and modify it as needed. While the Department is collecting the formal baseline data, the following accomplishments address our progress:

- The Information Technology Investment Resource Board (ITIRB) has strengthened IT management in the following ways:
 - Centralization of replacement of non-Y2K PC's, allowing lease as an acquisition option.
 - Long-term electronic mail solution (Microsoft Exchange).
 - Selection of standard office suite software (Microsoft Office).
 - Central management of Web servers.
 - Adoption of the Product Support Plan, which introduced product standardization.
 - Adoption of accessibility waiver procedures.
 - Financial Management System software replacement.
- Completed the *Enterprise Information Technology Architecture Framework, Volume I*, in September 1999.
- Developed the *IT Architecture Principles Guidance*, which provides development and management instructions for IT project sponsors.
- Developed ITIRB core competencies and began training to the competencies.
- Completed *Exhibit 53 Data on Information Technology* for budget submission. This exhibit classifies Department IT project spending in three categories: mission area, infrastructure and office automation, and IT architecture and planning.

Indicator 4.4.b. Employees will assess productivity as "significantly improved" as a result of available technology, as shown by the employee survey in 2000.

Assessment of Progress. On target. According to the 1996 employee survey, 70.2 percent of ED employees mostly agree or strongly agree that their productivity has improved as a result of available technology. Another survey will be conducted in the spring of 2000 and annually thereafter. Success in these functions will also be assessed by OCIO, provided by customer satisfaction surveys now being developed and possibly by other indirect means. OCIO will also conduct pre- and post- tests at IT training and will conduct a total cost of ownership survey in 2000, which will complement the data discovered through the 2000 Office of Management (OM) employee survey. ED's Assistive Technology Team received a Vice-Presidential Hammer Award. Working with employees, advocates, industry experts, and other agencies, the team developed the requirements for use in the contract language for its information technology acquisitions, assuring that software, developed or procured, would be accessible to disabled employees and customers alike.

Figure 4.4.b.1



Source: Assistive Technology Program of OCIO. *Frequency:* Biennial. *Next Update:* 2001. **Validation procedure:** Data are validated by the internal review procedures of an experienced data collection agency. **Limitations of data and planned improvements:** Limitations are few as a result of the straightforward bookkeeping. One limitation is that this is a quantitative measure only and does not measure how much an impact it has on the recipient employees. A user survey will need to be developed to identify this impact.

The Department of Education Assistive Technology Program, in the Office of the Chief Information Officer (OCIO), has improved the delivery of information and the access to information systems for more than 200 disabled staff and customers. ED has become a leader in the Federal Government movement toward providing access to data, information, and information systems worldwide. As a result of the assistive technology services offered within ED, we meet all employees' needs in this area.

The ED program has impacted Federal and public policy legislation, the development criteria of worldwide information technology firms, Federal procurement procedures, and legislation to benefit the disabled.

Intranet Use from November 1998 to December 1999

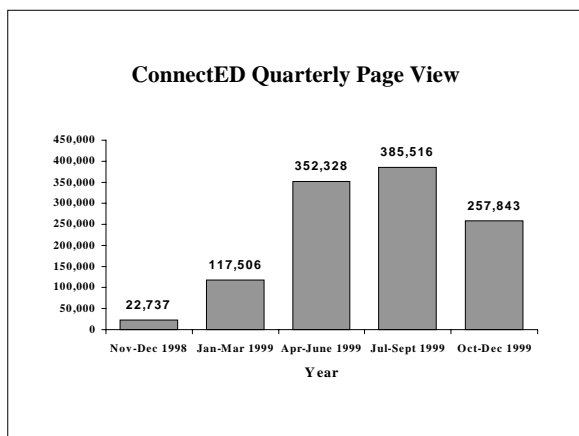


Figure 4.4.b.2

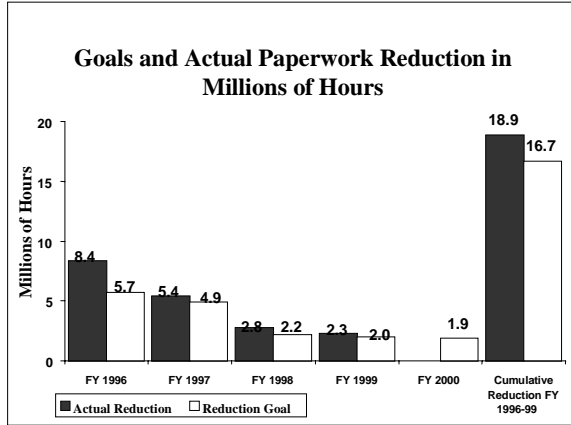
Source: OCIO Intranet Project Manager's analysis of the Web usage log. **Frequency:** Monthly. **Next Update:** N/A. **Validation procedure:** Data validated by internal review procedures of an experienced data collection agency. **Limitations of data and planned improvements:** It is a quantitative measure at this point; customer surveys and usability testing will be done in the future to measure the quality of content and services.

The Department's Intranet, ConnectED, was introduced in November 1998 and is continually being enhanced to provide better customer service, and to increase collaboration and communication among ED staff. In the future, indicators will be expanded to address improvements in data collection and more effective use of technology in administering grants. We are concerned that usage appears to be decreasing. The Intranet is being evaluated to assess the extent to which it meets employees' needs.

Indicator 4.4.c. Data reporting burden on public will be reduced annually.

Assessment of Progress. Target exceeded. The Paperwork Reduction Act (PRA) set a 10 percent reduction goal for FY 1996 and FY 1997, and 5 percent for FY 1998 through FY 2001, for Federal agencies to reduce the burden of information collections on the public. Since the PRA was enacted, the Department has exceeded its goals (see Figure 4.4.c.1). The Department reduced data-reporting burden by 8.4 million hours (14.7 percent) in FY 1996, 5.4 million hours (11 percent) in FY 1997, and 2.8 million hours (6.5 percent) in FY 1998. As of September 1999, the Department has reduced its burden by 2.3 million hours (5.6 percent), surpassing the FY 1998 goal. These significant burden reductions are due to the Department's increased use of information technology, successful regulatory reinvention efforts, and reinventing and streamlining information collection efforts. The burden on the public will also decrease by the electronic grants management strategy outlined in Objective 4.2 and by the improved Intranet and Internet strategy in Objective 4.1.

Figure 4.4.c.1



Source: Information Collection Budget of the Department of Education, FY 2000 submission dated December 1999. *Frequency:* Annual. *Next Update:* December 2000. **Validation procedure:** Data validated by internal review procedures of an experienced data collection agency. **Limitations of data and planned improvements:** Burden hours are estimated for all information collections. Based on experience, estimated burden hours tend to be more accurate for older collections, which are renewed on numerous occasions. Burden hour estimates for newer collections are probably less accurate. However, all information collections are subject to the Information Management Group of OCIO, OMB, and public reviews, and all comments made must be addressed by law.

Indicator 4.4.d. All major information systems needing repair will be converted to Year 2000 compliance by March 1999 (giving time for testing during 1999) and validated through operation into March 2000.

Assessment of Progress. Goal met. Each Federal agency was required by the Office of Management and Budget (OMB) to ensure that its information systems were fully compliant by March 31, 1999. OMB and the Government Accounting Office (GAO) assist agencies in planning, managing, and evaluating their Year 2000 programs through a four-phase process: assessment, renovation, validation, and implementation. The Department met its goal.

The Department established a Year 2000 project team and implemented technical solutions. The chart below illustrates the Department's 14 mission-critical systems and their progress to date. All of ED's 161 non-critical systems successfully completed the four-phase process.

Figure 4.4.d.1

Status of U.S. Department of Education Year 2000 Conversions for Mission-Critical Systems, as of January 1, 2000						
#	Mission Critical System	Y2K Phases				Status
		Assessment	Renovate	Validate	Implement (target date)	
Student Financial Aid Systems						
1	Central Processing System (CPS)					Completed
2	Direct Loan Central Database					Completed
3	Direct Loan Origination System					Completed
4	Direct Loan Servicing System					Completed
5	Postsecondary Education Participants System (PEPS)					Completed
6	Multiple Data Entry System (MDE)					Completed
7	Title IV Wide Area Network (TIVWAN)					Completed
8	Campus-Based System (CBS)					Completed
9	Federal Family Education Loan Program System (FFEL)					Completed

10	Pell Recipients and Financial Mgmt System (PELL)					Completed
11	National Student Loan Data System (NSLDS)					Completed
Other Program Systems						
12	Impact Aid Payment System					Completed
ED Administrative Systems						
13	ED Central Automated Processing System (EDCAPS)					Completed
14	Education's Local Area Network (EDLAN)					Completed

Source: Monthly and Quarterly Progress Reports to OMB, based on ED's inventory of systems, Y2K assessments, and subsequent monitoring of the renovation, validation, and implementation phases. *Frequency:* Monthly and quarterly. *Next Update:* March 2000. **Validation procedure:** Data validated by internal review procedures of an experienced data collection agency. All mission-critical systems were independently verified and validated by a third-party contractor. **Limitations of data and planned improvements:** Until the revised systems are active in a live environment, with data exchanges from external customers, Y2K compliance cannot be established with certainty. The New Year began with all systems "green," and systems are being monitored in real operation through March 2000 to validate that the status is certain.

How We Plan to Achieve Our Objective

How ED's Activities Support the Achievement of This Objective.

The mission of the OCIO is to enable the Department of Education to provide world-class customer service to schools, students, and their families through information technology. The following information technology strategies will increase the efficiency and effectiveness of ED's operations.

- **Cost-effective services that deliver for ED and its customers.**
 - The CIO will implement a capital planning and investment control process as required by the Clinger-Cohen Act. To improve the effectiveness of the Information Technology Investment Review Board's systematic and careful review of the acquisition and implementation of information technology. The first major systems assessed: student financial systems and financial systems as described in Objectives 3.3 and 4.6.
 - The CIO will train, develop, and equip an expert information management liaison team to the program offices. These expert OCIO consultants will help program offices develop specific information technology and information management plans and consult on Department-wide information management issues and paperwork reduction strategies.
 - The CIO created the Learning Network, which provides computer and policy training at the desktop of all ED employees at headquarters and in the regions. The Chief Information Officers Council and Training and Development Center together will examine employee core competencies in technology. The results of the project will allow for better targeting for training.
- **Information architecture/security.**
 - Maintain automated data processing systems, including network operations, and provide the latest technology to increase productivity and to provide better customer service, such as videoteleconferencing.
 - Continue to implement a Product Support Plan (PSP) that provides guidance of standard hardware and software products supported by ED.
 - Increase the use of the Internet as a service delivery medium for the Department and dictate an increase in security attention. Disruptions to IT services delivered to ED based on security problems can affect the ability of principal offices to maintain the business continuity of service to their customers.
 - Continue the Department's leadership in assistive technology.
 - Apply the lessons learned from the Y2K conversion and contingency planning to the continuity of operations/disaster recovery planning and to IT asset management procedures.
 - Monitor the Department's 14 critical and 161 non-critical systems through late March 2000 to ensure Y2K compliance and to respond to any issues that may be discovered.
- **Expanded Internet/Intranet presence.**
 - The CIO plans to expand the Department's role as portal to education information and services across hundreds of Web sites at Department-funded contractors and grantees, other Federal agencies, state agencies, and other partners (using cross-site indexing, meta-data/resource cataloging, and new finding tools), and a move to implement personalization technologies. The challenge now is to organize existing resources and use Internet technology to help educators and families easily find the precise information or service they need when they need it. For instance, a Deputy Secretary priority is to automate the grants management process and make it Web-accessible for application distribution, acceptance, and peer review.
 - The OCIO plans to redesign the Department's Intranet, ConnectED, to improve usability and make it easier for content owners to publish information. The first stage will include a complete restructuring of the site based on results of usability testing and focus groups. The new homepage will have the ability for each user to personalize his or her start-up page. The redesign will

provide advanced tools for our internal customers, such as, interactive forms, workflow and information dissemination tools, new products and technologies, and additional customer feedback opportunities.

■ **Data collection/information management.**

- OCIO plans to provide support, coordination, and direction to these current data improvement efforts in order to promote enterprise-wide information management. This will: increase the percentage of data collections allowing electronic responses, (with the goal of allowing all data collections to be electronic); consolidate our data collections; automate our grants management activities, including grant applications; improve the timeliness of our information dissemination; and assist in collaboration with our state and local education partners in the definition and implementation of data and information sharing. This will also reduce paperwork burden to the public.
- OCIO plans to initiate an enterprise data quality project. This project will measure the quality of the data, identify data clean-up opportunities, and help prioritize additional data quality initiatives. Existing legacy databases within ED have never been systematically audited for: completeness and validity, structural integrity, and data conformance to business rules. This will be done in the next two years.
- OCIO will also initiate an education information analysis project. This project will bring together experts in using education information and develop models of what the future national education information environment must provide to empower both parents and local groups in the improvement of their children's education.

How We Coordinate With Other Federal Agencies

The CIO is a member of the Federal CIO Council. Clinger-Cohen implementation is reviewed and monitored by OMB and GAO. Members of the OCIO and program offices also participate in electronic government initiatives.

Challenges to Achieving Our Objective

The Department of Education is a recognized Federal leader in IT accessibility. OMB has commended the Department for its capital investment planning of Student Financial Assistance (SFA) and OCFO projects. Participation of OCIO and other ED leaders on the Federal CIO Council working groups provide the opportunity to share our successes as well as to benchmark the best practices of other agencies and departments.

Highly trained technical and information technology management professionals command higher salaries in the private sector than the Federal government can offer; thus, they are difficult to recruit. The Chief Information Officers (CIO) Council is weighing a separate pay scale for government information technology (IT) employees.

ED, like all Federal agencies, awaits a final policy on electronic records management from the National Archives and Records Administration. The policy may affect resources devoted to expanding Internet service offerings.

Now that the first full-time Chief Information Officer (CIO) has joined the Department, the agency is better positioned to address the broad scope of information resources management responsibilities. The CIO has assessed the state of information technology in the Department and has made two incontrovertible findings: 1) the infrastructure is not ready for full-scale e-business; and 2) the Department's information technology business is not conducted from an enterprise-wide perspective.

In order to implement and comply with the regulations set forth in the Information Technology Management Reform Act/Clinger Cohen Act, the Paperwork Reduction Action, the Government Performance and Results Act, and the Government Paperwork Elimination Act, the primary goal of the CIO is to convert the Department to an enterprise-focused e-business. The conversion requires a mature information technology (IT) investment management and capital planning process, a robust business-driven information technology (IT) architecture, and a life-cycle process and management approach to all information technology (IT) and information management initiatives.

The Department's strategic plan is the catalyst for our enterprise approach to automating our information. As an agency, ED plans to consolidate our data collections; automate our grants management activities, including grant applications; improve the timeliness of our information dissemination; and collaborate with our state and local education partners in the definition and implementation of data and information sharing. Every facet of this approach will require significant resources for training and communication.

The existing network technology infrastructure has a solid foundation, but is inadequate to support full conversion to a business environment. We plan to expand and maximize the use of Internet technologies with our business partners and the public. In addition to expanding our technical and information infrastructure's capabilities, we plan to greatly enhance network security, introduce enterprise-wide use of video technologies, and ensure accessibility to people with disabilities.

The Department has few structured approaches for the management, collection, processing, storage, or distribution of data. We plan to develop an enterprise-based data dictionary with agreed-upon protocols for data management. Considerable effort is required to reconcile and standardize data given the hundreds of separately legislated programs; regulatory interpretations; and the wide range of capabilities to provide data electronically among our business partners, the state, and local education agencies.

When ED achieves the information technology (IT) environment envisioned above, it will be ready to move to the forefront of the movement in our society toward using the Internet as a virtual classroom—a vast learning environment. The Department will strive to become society's education encyclopedia, its portal to educational information worldwide. ED plans to accelerate the development of information architecture with an enterprise-level meta-data repository, and the Department will use the Internet and other evolving technologies to expand lifelong learning for all internal and external customers.